```
GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd
```

OM protein - nucleic search, using frame\_plus\_p2n model

December 11, 2002, 15:43:36; Search time 0.001 Seconds (without alignments) 202.014 Million cell updates/sec Run on:

us-09-880-457-4

1 MAILTLSLQLILLLIPSISH......TSAGLTLQDLQLWCNLRIIH score: Sequence: Perfect

BLOSUM62 Scoring table:

Xgapop 10.0 , Xgapext Ygapop 10.0 , Ygapext Fgapop 6.0 , Fgapext Delop 6.0 , Delext

1 seqs, 1161 residues

Searched:

N Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Command line parameters:
-MODEL=frame+\_p2n.model.-DEV=soft -O=us-09-880-457-4 -DB=us-09-880-457-1
-SUFFIX=pto -OUT=align\_1\_4 -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=bits
-START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40 cdi -LIST=45 -DOCALIGN=20
-THR\_SCORE=pct -THR\_MAX=100 -THR\_MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFMT=pto
-NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000 -NCPU=6 -NO\_XLPXI
-NGG\_SCORES=0 -LONGIGG -THREADSI - XGAPPOP=10 -XGAPEXT=0.1 -FGAPOP=6
-FGAPEXT=0.1 -YGAPOP=10 -YGAPEXT=0.1 -DELOP=6 -DELEXT=0.1

us-09-880-457-1:\* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

S

2

'n

S

S

# SUMMARIES

Description us-09-880-457-1 us-09-880-457-1 Ω 1161 1 1161 1 Query Score Match Length DB 1 455 100.0 2 91.6002 20.1 No. Result

us-09-880-457-1 RESULT 1

Conservative: Mismatches: Indels: Gaps: Length: Matches: 455.00 100.00% 100.00% 100.00% Best Local Similarity: Percent Similarity: Alignment Scores: Query Match: DB: Pred. No.: Score:

us-09-880-457-4 (1-87) x us-09-880-457-1 (1-1161)

1 MetalaileLeuThrLeuSerLeuGlnLeuIleLeuLeuLeuIleProSerIleSerHis 20 δy

qq	486	ATGGCAATCCTGACG	SCTCAGCCTTCAACT	CATCTTGTTATTAAT	ATGGCAATCCTGACGCTCAGCCTTCAACTCATCTTGTTAATAACCATCAATATCCCAT	545
ογ Op	21	GluAlaHisLysThi 	CSerLeuSerSerTr 	ppLysHisAspGlnAs 	GlualaHisLysThrSerLeuSerSerTrpLysHisAspGlnaspTrpAlaAsnValSer 	40
oy.	41	AsnMetThrPheSe	rAsnGlyLysLeuAr	cgValLysGlyIleTy	AsnMetThrPheSerAsnGlyLysLeuArgValLysGlyIleTyrTyrArgAsnAlaAsp	60
QV	61	IleCysSerArgHis	SArgValThrSerAl	aglyLeuThrLeuGl	InAspleuGlnLeuTrp	
qq	999	ATTIGCTCTCGACA?	TCGCGTAACCTCAGC	CAGGCCTAACTCTGC		725
Qy	81	CysasnLeuargIleIleHis                     TGTAATTTGAGAATCATTCAC	ellehis 87           CATTCAC 746			
RESULT us-09-8	T 2	-457-1/c				
Alignment Pred. No Score: Percent & Best Loce Query Mat DB:	nment No. e: ent S Loca y Mat	Scores: : imilarity: 1 Similarity: ch:	0 91.60 12.91% 20.13% 1	Length: Matches: Conservative: Mismatches: Indels: Gaps:	1161 34 26 27 202	
90-sn	9-880	-457-4 (1-87) x	us-09-880-457	-1 (1-1161)		
δy d	1 24	MetAl	асатсается в с	-LeuSerLeu         :::  crgaecgrcaegar	Leu	10
Oy			leProSerI	leSer	HisGluAlaHis	23
qq	474		::          TCATTTGCCTTCCTJ	::::          :: ACTTCTCCTGCTTGTCATTTGCTTTGCTAGATGTTCCCTCCACAGAAGGAAG	:::::: crccaccagagcaaggr	415
y d	24	TTTTTGACTG	GTTTGCTGACAAATC	LysThrSerLeuSerSerTrp           :::::     CCCAAATGCTCAAAAAATGCCTGG		30
δλ	31		isAspGlnAspTrp/	AlaAsnValSerAsnl	LysHisAspGlnAspTrpAlaAsnValSerAsnMetThrPheSerAsnGl	47
qq	354		ATACCTTCTACTGG	cccrccaggrccrcr	CTCCACTTCTCTCCCCG	295
do Dp	47		ysGlylleTyr       GGGCCACACCAA	CCCCTGTGGGTTGGG	YLYSLeuArgValLySGly1leTyrTyrArgAsnAl ::           ::         ::         ::           ::	59 235
Qγ	59		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		CysSerAr	64
QQ	234		GATTCCCCACCTCT	:::::: cgaggtcaggtattgattcqccacctctcacaggcctctcaaggcaggtft	CAGGGTGTTCCTGAAGC	175
Qy	9		hrSerAlaGlyLeuThr	Leu	9HisArgValThrSerAlaGlyLeuThrLeu	74
QQ	174		CTGTAGAACTTTCC	CTCCATGTCCTCGCA	ACCACGTCCTTATCCCC	7
Qy	7	-GlnAspLeuGlnLeuTr	euTrpCysAsnLeu	pCysAsnLeu-ArgIleIleHis 8	7	٠
QQ	114		TGCTGCCTGCTG	GAGGGTAGGACAC /	œ	
Sear	ch cc time	ompleted: December: 0.001 secs	11, 2002, 1	5:43:36		

·				
				<u>ر</u>
			·	

```
Compugen Ltd
. GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compug
```

OM protein - nucleic search, using frame\_plus\_p2n model

December 11, 2002, 15:52:53; Search time 43 Seconds Run on:

2.093 Million cell updates/sec (without alignments)

us-09-880-457-4

Perfect score: Title:

1 MAILTLSLQLILLIPSISH.....TSAGLTLQDLQLWCNLRIIH 87

Scoring table:

Sequence:

BLOSUM62 Xgapop 10.0 , Xgapext ( Ygapop 10.0 , Ygapext ( Fgapop 6.0 , Fgapext ( Delop 6.0 , Delext (

6 seqs, 517263 residues

12 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Maximum Match 100% Listing first 45 summaries Post-processing: Minimum Match 0%

-MODEL-frame+\_P2n.model -DEV-soft -Q-us-09-880-457-4 -DB-deberry457.seq -MODEL-frame+\_P2n.model -DEV-soft -Q-us-09-880-457-4 -DB-deberry457.seq -SUFFIX-pto -OUT-allgr4\_Lits -MINARCH=0.1 -LOOPECL=0 -LOOPECT=0 -UNITS-bits -STRANS-human40.cdi -LIST-45 -DCALIGN=200-THR\_SCORE=pct -THR\_MAX=100 -THR\_MIN-0 -ALIGN-15 -MODE-LOCAL -OUTFWT=pto -NORW-ext -HEAPSIZE=500 -MINLEN+0 -MAXIEN-2000000000 -NCPU-6 -NO\_XLPXY -NEG SCORES-0 -LONGLOG -THREADS-1 -XGAPOP-10 -XGAPEXT=0.1 -FGAPOP=6 -DELEXT=0.1 -FGAPOP=6 Command line parameters:

deberry457.seg:\* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

	Description		of:	TOIG of: abk3357	of:	TOIG of: ax36232							
	QI	abk33576	ax358828	ax362321	ac104794	ac010969	ac027264	ac010969	ac027264	ac104794	abk33576	ax358828	ax362321
	DB	Н	Н	Н	-	~	Н	-	Н	Н	Н	Н	Н
	Query Match Length DB	1186	1186	1186	165707	190748	157250	190748	157250	165707	1186	1186	1186
¥Ρ	Query Match	96.7	2.96	96.7	95.4	95.4	25.9	25.9	25.2	24.9	22.2	22.2	22.2
	Score	440	440	440	434	434	117.9	117.9	114.8	113.2	101.1	101.1	101.1
	Result No.	Т	2	m	4	0	o 0	7	80	ه د	c 10	c 11	c 12

```
TOIG of: abk33576 check: 121 from: 1
                                                                                  ID ABK33576 standard; cDNA; 1186 BP
RESULT 1
abk33576
```

to: 1186

```
Human; secreted protein; PRO; tumour; lung cancer; colon cancer;
                                                     breast cancer; prostate tumour; rectal tumour; liver tumour; pericyte cell proliferation; chondrocyte cell proliferation; tumour necrosis factor-alpha; gene; ss.
                                   cDNA encoding human PRO protein, Seq ID No 81.
                                                                                                                                                   2000US - 220585P
2000US - 220605P
2000US - 220607P
2000US - 22064P
2000US - 220664P
2000US - 220893P
2000US - 220893P
2000WO - US2352
2000WO - US2352
2000WO - US2352
                                                                                                                                                                                                                                                      2000WO-US32678
2000US-0747259
                                                                                                                                                                                                                                                                           2001WO-US06520.
2001US-0854280.
                                                                                                                                                                                                                                 200000S-000000P
                                                                                                                                                                                                                                                2000US-253646P
                                                                                                                                                                                                                                                                    2000WO-US34956
                                                                                                                                                                                                                                         2000WO-US30873
                                                                                                                                                                                                                                                                                         2001WO-US17092
                     08-MAY-2002 (first entry)
                                                                                                  WO200208288-A2.
                                                                                                                                                                        25-JUL-2000;
25-JUL-2000;
25-JUL-2000;
                                                                                     Homo sapiens.
                                                                                                                              29-JUN-2001;
                                                                                                                                                                                                                                                                                         25-MAY-2001;
                                                                                                                                                                                             25-JUL-2000;
26-JUL-2000;
                                                                                                                                                                                                                   23-AUG-2000;
                                                                                                                                                                                                                                                                   20-DEC-2000;
                                                                                                                                                                                                            28-JUL-2000;
                                                                                                                                                                                                                                 15-SEP-2000;
                                                                                                                                                                                                                                                28-NOV-2000;
                                                                                                                                                                                                                                                             20-DEC-2000;
                                                                                                                                                                                                                                                                                   10-MAY-2001;
                                                                                                                                                                                                                                        10-NOV-2000;
                                                                                                                                                          25-JUL-2000;
                                                                                                                31-JAN-2002
       ABK33576;
```

# (GETH ) GENENTECH INC.

Godowski PJ; Goddard A, Godowski ri nhan JF, Watanabe CK, Gerritsen ME, Goddard Smith V, Stephan JF, Baker KP, Desnoyers L, Grimaldi JC, Gurney AL, Baker KP,

## WPI; 2002-172001/22. P-PSDB; AAU83632.

One hundred and twenty two nucleic acids encoding PRO polypeptides, useful for treating a PRO related disorder and for diagnosing tumours such as lung cancer, colon cancer, breast tumour, prostate tumour, rectal tumour or liver tumour

# Claim 2; Figure 81; 359pp; English.

The invention relates to one hundred and twenty two nucleic acids encoding PRO polypeptides. The sequences of the 122 PRO polynucleotides encode human secreted proteins. The PRO nucleic acids, polypeptides, agonists and antagonists are useful for treating a PRO related disorder. The PRO polypeptides are useful for treating a PRO related disorder. The PRO polypeptides are useful for stimulating the cancer, breast tumour, prostate tumour, rectal tumour or liver tumour. The PRO polypeptides are useful for stimulating the proliferation of, or gene expression, in periorte cells, for stimulating the release of tumour necrosis factor-alpha from human blood, the proliferation or differentiation of chondrocyte cells, for stimulating or inhibiting the proliferation of normal human blood, for stimulating or inhibiting the proliferation of normal human blood, cor stimulating or inhibiting the proliferation of normal human dermal fibroblast cells. The PRO polypeptide may also be used as molecular weight markers and for tissue typing. The PRO nucleic acids have applications in molecular biology, including use as hybridisation probes, and in chromosome and gene mapping. ABR33356-ABR33567 represent human PRO PRO protein coding sequences of the invention.

align4 hits

```
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              314 a
                                                                                                                                                                                                                                                                                                                                  AX362321
                                                                                                                                                                                                                                                                                                                                                          AX362321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                               ax362321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ax362321
                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score:
                                                   ò
                                                                       qq
                                                                                                ά
                                                                                                                     엄
                                                                                                                                             ò
                                                                                                                                                                   g
                                                                                                                                                                                          δ
                                                                                                                                                                                                                g
                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAT 13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Baker, K.P., Desnoyers, L., Gerritsen, M.E., Goddard, A., Godowski, P.J., Grimaldi, J.C., Gurney, A.L., Smith, V., Stephan, J.P., Watanabe, C.K. and Wood, W.I.
Secreted and transmembrane polypeptides and nucleic acids encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                   40
                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                           61 IleCysSerArgHisArgValThrSerAlaGlyLeuThrLeuGlnAspLeuGlnLeuTrp 80
                               ABK33576 Length: 1186 December 11, 2002 15:45 Type: N Check: 121
                                                                                                                                                                                                                                21 GlualaHisLysThrSerLeuSerSerTrpLysHisAspGlnAspTrpAlaAsnValSer
                                                                                                                                                                                                                                                                              AsnMetThrPheSerAsnGlyLysLeuArgValLysGlyIleTyrTyrArgAsnAlaAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Type: N Check: 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
          Sequence 1186 BP; 314 A; 285 C; 299 G; 288 T; 0 other;
                                                                                 1186
84 · 1
1
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                       Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                            TOIG of: ax358828 check: 121 from: 1 to: 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO 0193983-A 81 13-DEC-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length: 1186 December 11, 2002 15:46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  288
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 81 from Patent W00193983.
                                                                                             Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
a 285 c 299 g 286
                                                                                 Length:
                                                                                                                              Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels:
                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genentech Inc. (US)
Location/Qualifiers
1. .1186
                                                                                                                                                             us-09-880-457-4 (1-87) x abk33576 (1-1186)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AX358828.1 GI:18675315
                                                                                                                                                                                                                                                                                                                                                                                      687 TGTAATTTGAGGTCAGTG 704
                                                                               0.211
440.00
98.848
97.678
                                                                                                                                                                                                                                                                                                                                                                           CysAsnLeuArgIleIle 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0.211
440.00
98.848
97.678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 314 a
                                                                                                                Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                                                      Percent Similarity:
                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                           Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; AX358828
ax358828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                               abk33576
                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                  ax358828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score:
x og
                                                                                                                                                                                    ò
                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                              δŏ
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                         δ
```

```
linear PAT 15-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Baker, K.P., Desnoyers, L., Gerritsen, M.E., Goddard, A., Goddowski, P.J., Grimaldi, J.C., Gurney, A.L., Smith, V., Stephan, J.P., Watanabe, C.K. and Wood, W.I.
Secreted and transmembrane polypeptides and nucleic acids encoding the same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                             506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21 GlualaHisLysThrSerLeuSerSerTrpLysHisAspGlnAspTrpAlaAsnValSer 40
                              61 IleCysSerArgHisArgValThrSerAlaGlyLeuThrLeuGlnAspLeuGlnLeuTrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Check: 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Type: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                      TOIG of: ax362321 check: 121 from: 1 to: 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent: WO 0208288-A 81 31-JAN-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AX362321 Length: 1186 December 11, 2002 15:47
                                                                                                                                                                                                                                                                                                                                                                                                                                         AX362321 1186 bp
Sequence 81 from Patent WO0208288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .1186
/organism="Homo sapiens"
/db_xref="taxon:9606"
a 285 c 299 g 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genentech, Inc. (US)
Location/Qualifiers
us-09-880-457-4 (1-87) x ax358828 (1-1186)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us-09-880-457-4 (1-87) x ax362321 (1-1186)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AX362321.1 GI:18694618
                                                                                                                                                                                                                                                                                                                      687 TGTAATTTGAGGTCAGTG 704
                                                                                                                                                                                                                                                                                                   81 CysAsnLeuArgIleIle 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0.211
440.00
98.84%
97.67%
96.70%
```

align4\_hits

3

g

g δ g δλ

```
be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9847074
                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ac010969/c
                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (30-APR-2002) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (21-DEC-2001) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                HTG 30-APR-2002
                                                                                                                                                                                                                                                                                                                               Homo sapiens chromosome 2 clone RP11-254F7, WORKING DRAFT SEQUENCE, 3 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 165707)
arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MO 63108, USA
On Apr 30, 2002 this sequence version replaced gi:19339129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 * NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing vector: A13.
Sequencing vector: A13.
Sequencing vector: A13.
Chemistry: Dye-primer ET: 0% of reads
Chemistry: Dye-primer ET: 0% of reads
Chemistry: Dye-primer ET: 0% of reads
Assembly program: Phrap, version 0.990319
Consensus quality: 162662 bases at least 040
Consensus quality: 163189 bases at least 030
Consensus quality: 164786 bases at least 020
Insert size: 9479; agarose-fp
Insert size: 167795; sum-of-contigs
Quality coverage: 12.78 in 020 bases; agarose-fp
Quality coverage: 10.53 in 020 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center: Washington University Genome Sequencing Center
Center code: WUGSC
                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACI04794.3 GI:20340520
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----- Genome Center -----
                                                                                                                                                                                                                                                                           TOIG of: ac104794 check: 7810 from: 1 to: 165707
                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The sequence of Homo sapiens clone Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequencing vector: M13; 0%
                                                                                                                                                                                                                                                                                                              165707 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 165707)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 (bases 1 to 165707)
Waterston, R.H.
                                                                                                                                                                               687 TGTAATTTGAGGTCAGTG 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                           CysAsnLeuArgileIle 86
                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                AC104794
                                                                                                                                                                                                                                                                                                                                                                            AC104794
                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                           81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                         ac104794
```

```
PRI 07-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 190748) Sulston, J.E. and Waterston, R. Groward a complete human genome sequence Genome Res. 8 (11), 1097-1108 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41120 AIGGAATCCTGATGCTCAGCCTTCAACTCATGTTATTAATACCATCAATACCAT 41179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC010969 190748 bp DNA linear PRI 07-N
Homo sapiens BAC clone RP11-95D17 from 2, complete sequence.
AC010969
                                                                                                                                                                                                                                                                                                                                                                                                                                            ; AC104794 Length: 165707 December 11, 2002 15:47 Type: N Check: 7810 ac104794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21 GluAlaHisLysThrSerLeuSerSerTrpLysHisAspGlnAspTrpAlaAsnValSer 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41 AsnMetThrPheSerAsnGlyLysLeuArgValLysGlyIleTyrTyrArgAsnAlaAsp 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MetalalleLeuThrLeuSerLeuGlnLeuIleLeuLeuLeuLleProSerIleSerHis
                                                                                                                                                                                                                                                                                                                                                                                 200 others
1112: contig of 1112 bp in length
1113 1212: gap of unknown length
1213 76227: contig of 7515 bp in length
76228 76327: gap of unknown length
76328 165707: contig of 89380 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOIG of: ac010969 check: 475 from: 1 to: 190748
                                                                                                                                                                                                                                                                                       1213. .76227
/note="assembly_name:Contig68"
76328. .165707
/note="assembly_name:Contig69"
a 42242 c 39083 g 41295 t
                                                                                                                                                                                                                                                                     /note="assembly_name:Contig21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches:
                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us-09-880-457-4 (1-87) x ac104794 (1-165707)
                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                            /clone="RP11-254F7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC010969.11 GI:13677120
                                                                                                                                                                                                         /chromosome="2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db 41360 TGTAATTTGAGGTCAGTG 41377
                                                                                                                                    1. .165707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81 CysAsnLeuArgileile 86
                                                                                                                                                                                                                                              ı, .1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.229
434.00
97.678
96.518
95.38%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
```

AUTHORS TITLE JOURNAL

AUTHORS TITLE JOURNAL REFERENCE

REFERENCE

AUTHORS TITLE JOURNAL

REFERENCE

REFERENCE AUTHORS TITLE JOURNAL

AUTHORS

TITLE JOURNAL

COMMENT

REFERENCE

```
Unresolved tandem repeat from base position 181200 to 187300. Sizinformation from restriction digest suggests that the full repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6939. .6989

/rpt_family="MIR"

7701. .8007

/rpt_family="Alu"

8242. .8532

/rpt_family="MERL_type"
                                                                                                                                                                             /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rpt_family="Alu"
835. .9300
rpt_family="MER1_type"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1716. .3745
'rpt_family="AT_rich"
                                                                                                                                                                                                 /db_xref="taxon:9606"
/chromosome="2"
                                                                                                                                                                                                                                                                                            /clone_lib="RPCI-11"
                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                          /clone="RP11-95D17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2179. .2369
/rpt_family="MIR"
2626. .3646
/rpt_family="L2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="MalR"
9784. .9848
/rpt_family="Alu"
                                                                                                                                                                                                                                                                                                        185. 230
/rpt_family="L2"
325. RAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="MIR"
2179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="L1"
12047. .12327
/rpt_family="Alu"
12335. .12416
                                                                                                                                                                                                                                                                                                                                                                                                                     806. .1114
/rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_family="L1"
/0062...no?c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rpt_family="Alu"
196. .5255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10647. .10948
/rpt_family="Alu"
10949. .11090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="Alu"
12016. .12045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="L1"
5256. .5559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1135. .11420
'rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                           'rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="L1"
1705, 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9322. .9647
/rpt_family="L2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="L1"
[1135. .11420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="L1"
                                                                                                         may not be represented
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .10948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .11090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .10646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .11704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .8834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .9784
                                                                                                                                                    .190748
                                                                                                                                                                                                                                                    /map="2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8835
       RP11-95D17.
                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :epeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                      source
                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (07-NOV-2001) Department of Genetics, Washington
Submitted (07-NOV-2001) Department of Genetics, Missouri 63108, USA
Onliversity, 4444 Forest Park Avenue, St. Louis, Missouri 63108, USA
On Apr 19, 2001 this sequence version replaced gi:11128441.
                                                                                                                                                                                                                                                                               Direct Submission
Submitted (19-APR-2001) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
Mo 63108, USA
5 (bases 1 to 190748)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The RPCI-11 human BAC library was made from the blood of one male donor, as described by Osoegawa.K., Woon,P.Y., Zhao,B., Frengen,E., Tateno,M., Catanese,J.J. and de Jong,P.J. (1998) An improved approach for construction of bacterial artificial chromosome libraries. Genomics 51:1-8. The clone may be obtained either from Research Genetics, Inc. (http://www.resgen.com) or Pieter de Jong and Coworkers at the Roswall Park Cancer Institute
(http://bacpac.med.buffalo.edu)
                                                                                                                                       Direct Submission
Submitted (28-SEP-1999) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (20-APR-2001) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mapping information for this clone was provided by Dr. John D. McPherson, Department of Genetics, Washington University, St. Louis Mo. For additional information about the map position of this sequence, see http://genome.wustl.edu/gsc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOTICE: This sequence may not represent the entire insert of this clone. It may be shorter because we only sequence overlapping clone sections once, or longer because we provide a small overlap between neighboring data submissions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    all regions were double stranded, sequenced with an alternate chemistry, or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one subclone; and the assembly was confirmed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               There are polymorphic base differences between RP11-95D17 and the redundant clone AC062035. Data from AC062035 was used to finish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The clone sequenced to the left is RPI1-521D12. Actual start of this clone is at base position 1 of RPI1-95D17; actual end is at base position 190748 of RPI1-95D17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This sequence was finished as follows unless otherwise noted:
                      Sun, H., Abbott, A. and Le, T.P.
The sequence of Homo sapiens BAC clone RP11-95D17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Web site: http://genome.wustl.edu/gsc
Contact: sapiens@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center project name: H_NH0095D17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEIGHBORING SEQUENCE INFORMATION:
(bases 1 to 190748)
                                                                                          (bases 1 to 190748)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 (bases 1 to 190748)
Waterston, R.
                                                                                                                                                                                                                                       (bases 1 to 190748)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAPPING INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               restriction digest.
                                                                                                                                                                                                                                            4 (bases 1 tc
Waterston, R.H.
                                                                                                                 Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MO 63108, USA
                                                                   Unpublished
```

```
Homo sapiens
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                              ACCESSION
                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                            AUTHORS
                                                                                                                                             REFERENCE
                                                                                                                                                              AUTHORS
                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear HTG 24-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 174305 ATTTGCTCTCGACATCGCGTAACCTCAGCAGCCTAACTCTGCAGGACCTTCAGCTATGG 174246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db 174485 ATGGCAATCCTGATGCTCAGCCTTCAACTCATGTTAATACCATCAATATCCAT 174426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db 174425 GAGGCTCATAAAACGAGTCTTTCTTCTTGGAAACATGACCAAGATTGGGCAAACGTCTCC 174366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluAlaHisLySThrSerLeuSerSerTrpLySHisAspGlnAspTrpAlaAsnValSer 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 IleCysSerArgHisArgValThrSerAlaGlyLeuThrLeuGlnAspLeuGlnLeuTrp 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MetalalleLeuThrLeuSerLeuGlnLeuIleLeuLeuLeulleProSerIleSerHis 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST AL571368 (NID:g12928594)"
                                                                                                                                                                                                                                                                                                                                                                                                      BF770791 (NID:g12118691)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST BF699834 (NID:g11985242)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST BF668191 (NID:911942086)"
                                                                                                                                                                                                             EST BF770132 (NID:q12118032)"
                                                                                                                                                                                                                                           EST BF770135 (NID:912118035)"
                                                                                                                                                                                                                                                                           BF770134 (NID:912118034)"
                                                                                                                                                                                                                                                                                                         EST BF770127 (NID:912118027)"
                                                                                                                                                                                                                                                                                                                                        EST BF770793 (NID:912118693)"
                                                                                                                                                                                                                                                                                                                                                                        EST BF770796 (NID:912118696)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST AL545813 (NID:g12878338)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOIG of: ac027264 check: 9979 from: 1 to: 157250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157250 bp
                                                                                                                                                                                                                                                                           EST
                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                us-09-880-457-4 (1-87) x ac010969 (1-190748)
                                                                                                           /rpt_family="Alu"
13194. .13433
/rpt_family="L2"
13557. .13667
/rpt_family="Alu"
13614. .14110
/note="similar to I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="similar to
14422. .14474
                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="MIR"
14062. 14259
/note="similar to
                                                                                                                                                                                                                            13623. .14122
/note="similar to
13630. .14128
                                                                                                                                                                                                                                                                 3630. .14128
note="similar to
                                                                                                                                                                                                                                                                                                 13535. .14128
/note="similar to
13688. .13942
                                                                                                                                                                                                                                                                                                                                                        13727. .14127
/note="similar to
                                                                                                                                                                                                                                                                                                                                                                                       13729, .14126
/note="similar to
13735, .13801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14144. .14259
/note="similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14205. .14259
/note="similar to
                                                                                                                                                                                                                                                                                                                                        'note="similar to
                                                                               /rpt_family="Alu"
12955. .13065
                  /rpt_family="Alu"
12596. .12678
                                               /rpt_family="L1"
12698. .12954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db 174245 TGTAATTTGAGGTCAGTG 174228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81 CysAsnLeuArgilelle 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.229
434.00
97.67%
96.51%
95.38%
                                                                                                                                                                                                                                                                                            13635.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC027264
   repeat_region
                                   repeat_region
                                                                                                                               repeat_region
                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                   repeat_region
                                                                                                 repeat_region
                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ac027264/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
HONGING SENSON STATES CHROMOSOME 2 clone RF11-164PB map 2, WORKING DRAFT
SESSION STATES CHROMOSOME 2 clone RF11-164PB map 2, WORKING DRAFT
ROOTS 4.

ACO2734. 2 GILI057976
GORDS
GOR
```

9

```
NOTE: This is a 'working draft' sequence. It currently consists of 21 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
Center clone name: 164_P_8

Sequencing vector: M13, M7/815; 100% of reads Sequencing vector: M13, M7/815; 100% of reads Chemistry: Dye-terminator B19 Dye; 100% of reads Assembly program: Phrap; version 0.960731
Consensus quality: 14198 bases at least Q40
Consensus quality: 151395 bases at least Q20
Insert size: 155000; agarose-fp
Insert size: 155250; sum-of-contigs
Quality coverage: 4.1 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 bp 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82020 82119: gap of 100 bp 107511: gap of 100 bp 107512 107511: gap of 100 bp 107512 116168: contig of 25292 bp in length 107512 116168: contig of 8657 bp in length 116169 116268: gap of 100 bp 128458: contig of 12190 bp in length 128459 128558: gap of 100 bp 128559 146712: contig of 18154 bp in length 146713 146812: gap of 100 bp 146713 157250: contig of 10438 bp in length 16513 157250: contig of 10438 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64504: gap of 100 bp 71871: contig of 7367 bp in length 71971: gap of 100 bp 82019: contig of 10048 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901 1000: gap of 100 bp 1001 2288: contig of 1288 bp in length 2389 2388: gap of 100 bp 1350 4049: gap of 100 bp 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15711 15810: gap of 100 bp 15811 19721: contig of 3911 bp in length 19722 19821: gap of 100 bp 100 bp 19822 24311: contig of 4490 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100 bp
: 8264 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          p of 100 bp contig of 6916 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      47516: gap of 100 bp 56743: contig of 9227 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64404: contig of 7561 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            32775: gap of 100 bp 40400: contig of 7625 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       900: contig of 900 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="RPCI-11 Human Male BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .900
/note="assembly_fragment
clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="RP11-164P8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4312 24411; gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40500: gap of
47416: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15810: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
```

```
89297 TCACAAGAACAGCATGGGGGAAACTGCCCCCATGATCCAGTCACCTCCCACTAGGTCCCT 89238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length: 157250 December 11, 2002 15:49 Type: N Check: 9979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .....LeuIle...-.-LeuLeuLeuIleProSerIle 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26 erLeuSerSerTrpLys------HisAspGlnAspTrpAlaAsnValSerAsnMetTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----LeuArgValLys------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vector_side:right"
32097 c 31766 g 45991 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment"
128559. .146712
/note="assembly_fragment"
/146813. .157250
/note="assembly_fragment"
1001. .2288
/note="assembly_fragment"
2389. .3949
                                389. .3949
'note="assembly_fragment"
                                                       .050. .6137
'note="assembly_fragment"
                                                                                     /note="assembly_fragment"
8150. .12625
                                                                                                                                                                                                                        24412. .32675
/note="assembly_fragment"
32776. .40400
                                                                                                                                                                                       'note="assembly_fragment"
19822. 24311
'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                    1972. .82019
'note="assembly_fragment"
                                                                                                                 /150. .12625
/note="assembly_fragment"
                                                                                                                                                          /note="assembly_fragment"
15811. .19721
                                                                                                                                                                                                                                                                            /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
47517. .56743
                                                                                                                                                                                                                                                                                                                                                                                                note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment"
107512. .116168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                      'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19 SerHisGluAlaHis----LysThr-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          us-09-880-457-4 (1-87) x ac027264 (1-157250)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    116269. .128458
                                                                                                                                                                                                                                                                                                                                                                                                                                           82120. .107411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9.14
117.90
18.338
12.228
25.918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43 rPheSerAsnGlyLys----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45395 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SerLeuGln--
misc_feature
                             misc_feature
                                                                                     misc_feature
                                                                                                                 misc_feature
                                                                                                                                              misc_feature
                                                                                                                                                                           misc_feature
                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC027264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ac027264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
```

```
Submitted (07-NOV-2001) Department of Genetics, Washington University, 4444 Forest Park Avenue, St. Louis, Missouri 63108, USA on Apr 19, 2001 this sequence version replaced 91:11128441.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (19-APR-2001) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (20-APR-2001) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (28-SEP-1999) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRI 07-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria, Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 190748)

Sulston,J.E. and Waterston,R. Toward a complete human genome sequence Genome Res. 8 (11), 1097-1108 (1998)
                                                                                                                                                                    Db 89057 AAATCTAACATGCTATTGTTACATACGCCATTATTTTAAGTACTGCTAAGAAGAA 88998
                                                                                                                                                                                                                                                      Db 88997 AAGAGTGCTACAAATTCAATTTTGACATGCCAGTGATTGTAAGATAAATCTTGATTTCTA 88938
89177 CATAICAGCAICCAAGAGGAAAITICAAGCAIGCAGTIAGAIGTAAAAGICIGCAGIICA 89118
                                                                                89117 GGAGAGAGGTCTGAGCCGGAGACATAAATTTCGAAGCTGTTAGTTTATATTATAATCATG 89058
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACU10969 190748 bp DNA linear PRI 07-N
Homo sapiens BAC clone RPl1-95D17 from 2, complete sequence.
AC010969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center: Washington University Genome Sequencing Center
Center code: WUGSC
                                         ------Gly1leTyrTyrArg---- 57
                                                                                                                             58 -----AsnAlaAspIleCysSer---ArgHis------
                                                                                                                                                                                                                                                                                                                           76 -AspLeuGlnLeuTrpCys------AsnLeuArgllelle 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sun,H., Abbott,A. and Le,T.P. The sequence of Homo sapiens BAC clone RP11-95D17 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Web site: http://genome.wustl.edu/gsc
Contact: sapiens@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                  TOIG of: ac010969 check: 475 from: 1 to: 190748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center project name: H_NH0095D17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----- Summary Statistics
                                                                                                                                                                                                                         66 -ArgVal--ThrSerAlaGlyLeuThrLeuGln-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC010969.11 GI:13677120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 190748)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 (bases 1 to 190748)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to 190748)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 190748)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 190748)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Waterston, R.H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MO 63108,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99063792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PUBMEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                             δλ
```

```
The RPCI-11 human BAC library was made from the blood of one male donor, as described by Osogawa, K., Woon, P. Y., Zhao, B., Frengen, E., Tateno, M., Catanese, J.J. and de Jong, P.J. (1998) An improved approach for construction of bacterial artificial chromosome libraries. Genomics 51:1-8. The clone may be obtained either from Research Genetics, Inc. (http://www.resgen.com) or pleter de Jong and coworkers at the Roswell Park Cancer Institute (http://wence.pub.
                                                                                                                                                                                                                                                                                                                                                                                                                          Louis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unresolved tandem repeat from base position 181200 to 187300. Size information from restriction digest suggests that the full repeat
                                                                                                                                                            all regions were double stranded, sequenced with an alternate chemistry, or covered by high quality data (1.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one subclone; and the assembly was confirmed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 There are polymorphic base differences between RP11-95D17 and the redundant clone AC062035. Data from AC062035 was used to finish
NOTICE: This sequence may not represent the entire insert of this clone. It may be shorter because we only sequence overlapping clone sections once, or longer because we provide a small overlap between neighboring data submissions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The clone sequenced to the left is RP11-521D12. Actual start of this clone is at base position 1 of RP11-95D17; actual end is at base position 190748 of RP11-95D17.
                                                                                                                                                                                                                                                                                                                                                                                       Mapping information for this clone was provided by Dr. John D. McPherson, Department of Genetics, Washington University, St. L. MO. For additional information about the map position of this sequence, see http://genome.wustl.edu/gsc
                                                                                                                                          This sequence was finished as follows unless otherwise noted:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEIGHBORING SEQUENCE INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rpt_family="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="RPCI-11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="RP11-95D17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="Alu"
5560. .6453
/rpt_family="L1"
6939. .6989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="MIR"
2179. .2369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_family="Alu"
1449. .1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rpt_family="MIR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'rpt_family="L2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'rpt_family="L2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        may not be represented
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 5559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4101
                                                                                                                                                                                                                                                                                                                                                                                    MAPPING INFORMATION:
                                                                                                                                                                                                                                                                                                                               restriction digest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
```

repeat\_region

Page 8

			e 18 : A 30806	S 26   T 30866	43	52 30980	57	31046 65	31106 75	31166			24 - AUG - 2002 G DRAET	Page	Euteleostomi; : Homo		., Allen,N., .lins,S., .S., .Gage,D., .L., .L., .Karatas,A., .Ky,J.,
	48	·	:::	SerHisGlualaHisLysThr	erLeuSerSerTrpLysHisAspGlnAspTrpAlaAsnValSerAsnMetTh        :::     CCCTCCAGACATGGGGATTACAATTCAAGATGACATTTGGGTGGG	rPheSerAsnGlyLys	GGAGAGAGGTCTGAGCCGGAGACATAAATTTCGAAGCFGTTAAAATAAAA	AsnAlaAspIleCysSerArgHis	-ArgvalThrSeralaGlyLeuThrLeuGln	CTTGATTTCTA	Le 86 :: FA 31217	1	ar HTG 2. WORKIN		rata; Eutel nidae: Homo		aham, H eda, F., L, G., M., Col Joiaz, Col Hugh, W., Aham, L., Horton In, E.,
	1907 38 : 19 23 231		LeuLeu ::: ATGAGA	ACCTCC	aAsnva] GGGGACA	ValLys-         GTAAAAG	ly11eTy :::		AGTACTG	ATAAAT	rgilei] ::[  :	0	1 P8		Verteb i; Homi	nder, E. 54P8	C.E., Al. Cen, V., Jen, V., Jen, V., Jen, V., K. Cewar, K. P., Fith Ce, M., G. Grod, A., G.S.C., K. ders, T.,
	Length: Matches: Conservative Mismatches: Indels: Gaps:	; ;	CAGATCTC	ATCCAGTC	AsptrpAl     ATTTGGGT	LeuargValLys      GTTAGATGTAAAA	AGC#G##A		TATTTA	ATTGTAAC	-AspLeuGlnLeuTrpCys	0: 15725	DNA RP11-1		Craniata; Ve Catarrhini;	and Lar RP11-16	to 157250) Linton,L., Nusbaum,C., Lander,E., Abr., Baldwin,J., Barna,N., Bastien,V., B., L., Boukhgalter,B., Brown,A., Burket,A., Castle,A., Choepel,Y., Colangelo,I., Cooke,P., DeArellano,K., Dowar,K., Daino,M., Doyle,M., Ferreira,P., Fitzl Gardyna,S., Ginde,S., Goyette,M., Graches,N., Grant,G., Hagos,B., Haeford,A., Iliev,I., Johnson,R., Jones,C., Karitcoque,K., Lamazares,R., Landers,T.,
	Length: Matches: Conservat Mismatche Indels: Gaps:	-190748)	AAACAGT	CCCCATG	sAspGln.    ::: AGATGAG	AGCATGC	ATTTCGAA	ArgHis	racccar LeuGln	reccaere	CATTTA	m: 1 to	157250 bp e 2 clone	ieces. RAFT.	data; Cr ates; Ca	sbaum,C. 2, clone	bbaum, C. Barna, N er, B., Choepe eArella e, M. Hagos ohnson,
.14474	O or or or	0969 (1-	CACTITIES	-LysThr :::    GGAAACTGC	Hi	AATTTCA	GACATAA	Cysser-	reraaca: VLeuThrI	FTTGACAT	GAGGGGA	79 from:	157; mosome 2	dered piece 567976 HTGS_DRAFT	a; Chore	/250) /L., Nus mosome )	7250) 'L., Nus 'in, J., oukhgalt stle,A., ce,P., D 1., Doyl a,S., G trant,G.
14422.	044464	x ac010969	GAAATGC	HisI	rpLys       GGGATTA	/Lys       AAGAGGA	AGCCGGA	aAspile	erAlaGly	ATTCAAT	-AspLeuGlnLeuTrpcys    ::::::::    GGATGTTAAAATGTGGTATGG	check: 997	264 15 Sapiens chromosome	2l unor GI:10 PHASEl;	Homo sapiens Eukaryota; Metazoa; Chordata Mammalla; Eutheria; Primates	Linton	l to 157250) Linton,L., Nu. S., Baldwin,J., 1y,L., Boukhgal O,A., Castle,A., A., Cooke,P., Domino,M., Doy rre,N., Grant,G. C., Iliev,I., LaRocque,K.,
feature	es: :ity: :larity:	457-4 (1-87) SerLeuGln	:111 GCAGGGG	SerHisGluAlaHis-                 TCACAAGAACAGCATG	SerSerTa :::   CAGACATO	rPheSerAsnGlyLys         CatAtCAGCATCCAAG		AsnAl	1Thrs	GCTACAA	uGlnLeu :::::: TAAAATG	7264 cł	AC027264 Homo sapie	SEQUENCE, AC027264 AC027264.2 HTG; HTGS_B	o sapiens aryota; M malia; Eu	ren, B., lo sapie	(bases ren, B.) erson, S. erson, S. erson, S. erson, S. erson, S. lymore, J. ge, S., I. agan, J., adan, J. land-piers
misc_fea	t Scores .: Similari al Similate	0-457-4 7 SerLe					_			AAGAGT	-AspLe    :: GGATGT	: ac027264			SM HOMO Eukar Mamma	S Bir	And Bog Com Com Con
E	gnmen d. Nc re: cent t Loc ry Ma	-09-88	3074	1 3080	30867	30927	53 30987	31047	99	31107	76 31167	RESULT 8 ac027264 ; TOIG of	LOCUS DEFINITION	ACCESSION VERSION KEYWORDS SOURCE	ORGANISM	AUTHORS TITLE JOURNAL	AUTHORS AUTHORS
••	A Pri	us-( VQ	qa	Qy Db	Qy Dp	QY	Qy Db	Qy	0y	ar i	do Dp	RES ac0.	й <u>ё</u> 	, , , , , , , , , , , , , , , , , , ,			R R R R R R R R R R R R R R R R R R R

```
10 40500: gap of 100 bp 10 47416: contig of 6916 bp in length 17 47516: gap of 100 bp 17 55143: contig of 9227 bp in length 17 55443: gap of 100 bp 100 bp 14 56843: gap of 100 bp 100 bp 171871: contig of 7367 bp in length 18 54504: gap of 18 5570 bp in length 19 5570 bp in length 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    116.169 116.268: gap of 100 bp 116.269 128458: contig of 12190 bp in length 128459 128558: gap of 100 bp 128559 146712: contig of 18154 bp in length 146713 146812: gap of 100 bp 146713 157250: contig of 10438 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      p of 100 bp contig of 10048 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82020 82119: gap of 100 bp
82120 107411: contig of 25292 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7511: gap of 100 bp 116168: contig of 8657 bp in length
                                                                                                                                                                                                                                                                                                                                                          p of 100 bp
contig of 3911 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                        p of 100 bp contig of 4490 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24312 24411: gap of 100 bp 24412 32675: contig of 8264 bp in length 32675: gap of 100 bn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                p of 100 bp contig of 7625 bp in length
                                                                      100 bp
f 2088 bp in length
                                                                                                                                                                           contig of 1812 bp in length
                                                                                                                                                                                                                      9: gap of 100 bp
12625: contig of 4476 bp in length
                                                                                                                                                                                                                                                                                        12725; gap of 100 bp
15710: contig of 2985 bp in length
of 100 bp
contig of 1561 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="RPCI-11 Human Male BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19822. .24311
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24412. .32675
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
47517. .56743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8150. 12625
/note="assembly_fragment"
12726. 15710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment"
                                                                                                                                               100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4050. .6137
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment
                                                      100
137: gap of 20
8049: r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="RP11-164P8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone_end:SP6
vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9/1: gap of
82019: con+
                                                                                                                                                                                                                                                                                                                                                                         .5711 15810: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                            19821: gap of 24311: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .40400
       2289 2388: gap of
                                                                      3950 4049: gap of
4050 6137: co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .19721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .2288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40400:
                                                                                                                                                                                                                                                                                                                                                                                                            19721:
                                              3949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107412 107511:
                                                                                                                                                                                                                             8050 8149:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1001
                                                                                                                                               6138 6237:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71872 71971
                                                                                                                                                                                                                                                                                                                                                                                                                15811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nisc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission

AL Submitted (28 MAR-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA

CE 3 (bases 1 to 157250)

RS Birren, B. Linton.L. Bactachen, C. Badark, Boguslavkiy, L. Anderson, S. Barna, N. Bactachen, V. Beda, F. Boguslavkiy, L. Anderson, S. Barna, N. Bactachen, V. Castle, A. Galangelo, M., Collins, So. (Collymore, A., Cooke, P., Choepel Y. Colangelo, M., Collins, So. (Collymore, A., Cooke, P., Fitzlugh, M., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M. Fitzlugh, M., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M. Iliew, L., Grand-Pietre, M., Hagos, B., Hadoford, Hacoton, L., Inamzares, R., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Macdonald, P., Marquis, N., McCharly, M., McEwan, P., McEwann, R., McCharly, M., McChan, P., McGrann, M., McChan, C., Rieback, M., Riley, R., O'Nenl, D., Olivar, T. M., Oliver, J., Peterson, R., O'Donnell, P., O'Neil, D., Olivar, T. M., Oliver, J., Peterson, R., Sougnez, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Strauss, N., Subramanian, A., Talamas, J., Tasfayer, R., Voll, R., Voll, R., Voll, R., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Young, G., Zainoun, J., Nirer Annies, A. and Zody, M., Tirert, A. and Zody, M., Tirert, A. and Zody, M.
Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Miranda, C., Mlenga, V., Morrow, J., Morran, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Olivar, T.M., Oliver, J., Peterson, K., Pierre, N., Pisani, C., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Roy, A., Santos, R., Schauer, S., Severy, P., Spencer, B., Tesfaye, Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Tigillo, J., Vong, G., Zainoun, J., Zimner, A. and Zody, M., Wyman, D., Ye, W.J., Direct, Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (24-NUG-2002) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on oct 4, 2000 this sequence version replaced gi:7331634.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOTE: This is a 'working draft' sequence. It currently consists of 21 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center project name: L8993

Center clone name: L8993

Center clone name: L84_P.8

Sequencing vector: M13: M7815; 100% of reads
Sequencing vector: M13: M7815; 100% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Assembly program: Phrap; version 0.960731

Consensus quality: 151395 bases at least Q40

Consensus quality: 153976 bases at least Q20

Insert size: 155500; agarose-fp

Insert size: 155500; agarose-fp

Conlity coverage: 4.1 in Q20 bases; sum-of-contigs

Quality coverage: 4.1 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Web site: http://www-seq.wi.mit.edu
Contact: sequence_submissions@genome.wi.mit.edu
------ Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901 1000: gap of 100 bp 1001 2288: contig of 1288 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900: contig of 900 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
```

Db 658	ōλ	059 qa	Qy	DP 660	Qy	099 qa	Qy	Db 661	Oy 86.1	RESULT (	TOIG	ACCESS	SOURCE ORGZ	REFERE	TITI JOUR REFERE	AUTH	JOUR	REFERE AUTH TITL	JOUR	COMMEN							
_						П	O.	Д	0 4	) PX 0	J			** ** ** **			•• •• ••						. •. •	 	 		
// // // // // // // // // // // // //	misc_feature 64505. 71871	//note="assembly_fragment" // misc_feature 71972. 82019	; //note="assembly_fragment" ; misc_feature 82120, 107411	; //note="assembly_fragment" ; misc_feature 107512116168	; //note="assembly_fragment" ; misc_feature 116269128458	; /note="assembly_fragment" ; misc_feature 128559146712	//note="assembly_fragment" // misc_feature 146813. 157250	/note="assembly_fragment clone_end:T7	BASE COUNT 45395 a 32097 c 31766 g 45991 t 2001 others ; ORIGIN	; AC027264 Length: 157250 December 11, 2002 15:49 Type: N Check: 9979	9.31 Length: 114.80 Matches:	Best Local Similarity: 9.58% Mismatches: 24 Query Match: 15.23% Indels: 24 DB: 1 Gaps: 2		OY 1 MetAlalleLeuThrLeuSerLeuGlnLeuIleLeuLeuLleuIle 15	23		Db 65460 AGCGTCTTAGGACAGGTGTGTGAAGCAGGATGTGGTCCCCTTATTTAGTGGCATG 65519	39	QY 39	Db 65580 TCCCCTATTGTGTCAAAGGGTGTCATTTATGTTTGCCGTCAAGATGTCTATCAGCAGAG 65639	39	Db 65640 TGCTTCTCAGACCTCTCTTTGTTTCTTTGATGAGGAGTTTGGAAATCAGACAACT 65699	Qy 40SerA 41	Oy 41 snMetThrPheSerAsnGly	4	658	0.y 47

```
University School of Medicine, 4444 Forest Park Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, Mo 63108, USA

Shaess 1 to 165707)

Waterston, R.H.

Direct Submission

LE Waterston, R.H.

Direct Submission

Workling Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, Mo 63108, USA

On Apr 30, 2002 this sequence version replaced gi:19339129.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC104794 165707 bp DNA linear HTG 30-APR-2002 HOMO sapiens chromosome 2 clone RP11-254F7, WORKING DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (Dases 1 to 165707)
Waterston, R. H.
880 CTAAAGTCATGGTATCACTGAAACTTCATACAGTTAGAATTTAGTTTTATACTTCATGCA 65939
                                                                                                  940 GAGAAAAAATCTCAGCAGTTTCATCGCTGACTATACTAAGCTCTATGTATAACTCACTG 65999
                                                                                                                                                                                                          000 CATTATACTGCAGTATTAAATCTGAGATAATCCACAATCCACCTCCTGCCCTGTGAAAA 66059
                                                                                                                                                                                                                                                                                          120 CAGGGCATGGCACCATGTCTTCACTTGGAGTTGTGGGCAAGCACTCTTCACTGGGGAC 66179
                                                    48 -----LysLeuArgVal-LysGlyIle 54
                                                                                                                                                      55 TyrTyr-----SerA 64
                                                                                                                                                                                                                                                         64 rgHis-----ArgValThrSer-----AlaGlyLeuThrLeuGln------ 75
                                                                                                                                                                                                                                                                                                                                                                 76 ------ 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center: Washington University Genome Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Web site:http://genome.wustl.edu/gsc/index.shtml
Contact: submissions@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequencing vector: Mi3, 0%
Sequencing vector: plasmid; 100%
Chemistry: Dye-primer ET; 0% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 162662 bases at least Q40
Consensus quality: 163189 bases at least Q30
Consensus quality: 164786 bases at least Q20
Insert size: 9479; agarose-fp
Insert size: 167795; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN. Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 of: ac104794 check: 7810 from: 1 to: 165707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The sequence of Homo sapiens clone Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center project name: H_NH0254F07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC104794.3 GI:20340520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unordered pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC104794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOITIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LE
RNAL
```

```
qq
                                                                                                  g
                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 53316 CCAATGA-AAACTAAATACGCTCTGCCTCTGTCGCAAATCTTCTGTGGATATGCGTCTGT 53258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53434 CTTGATATGTTCTGAAGTCAATGGGTCCATGAGTGTTGGAATGTAAATTATTTAATGAGG 53375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53374 ACA--GCTGAGGTGAAATTTCTTCCAAATTATGTTTACACAATTATACATTTTAGCCTTT 53317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53554 TAGGAGACCTCATTACTGAGTACTTCAGGGCCAGCCAGATCATTGGGGAAGATGGAGTCT 53495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DD 53674 GCICTITIGAAIGGICIGGCICAGCAGACACTITIGCCAGCACACACCTIAGTCAGGA 53615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53614 TICTICCTACTGGTATCAAAGTACAAACTCCCAGTGACACTTCAGAGAGCAGCTGACTAAC 53555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45 erAsnGlyLysLeuArg------ValLysGlyIleTyrTyrArgAsnAlaAspIl 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------- AsnMetThrPhe-----S 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----SerArgHisArgValThrSerAlaGl 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----GlnA 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 leLeuLeuLeuIle------ 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC104794 Length: 165707 December 11, 2002 15:47 Type: N Check: 7810
           *** UNTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
Quality coverage: 12.78 in Q20 bases; agarose-fp Quality coverage: 10.53 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                            200 others
                                                                                                                           1112: contig of 1112 bp in length
1212: gap of unknown length
76227: contig of 75015 bp in length
76327: gap of unknown length
165707: contig of 89380 bp in length.
                                                                                                                                                                                                                                                                               Conservative:
                                                                                                                                                                                                                                                                      /note="assembly_name:Contig21"
                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                          Matches:
                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels:
                                                                                                                                                                                                                                                                                                                                                                                                              Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          us-09-880-457-4 (1-87) x ac104794 (1-165707)
                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                               /clone="RP11-254F7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35 spTrpAlaAsnValSer------
                                                                                                                                                                                                                                     /chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                        113.20
18.75%
14.38%
24.88%
                                                                                                                                                       1213
76228
76328
                                                                                                                                             1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 eCys----
                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                  ac104794
                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΩŸ
```

```
One hundred and twenty two nucleic acids encoding PRO polypeptides, useful for treating a PRO related disorder and for diagnosing tumours such as lung cancer, colon cancer, breast tumour, prostate tumour, rectal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gerritsen ME, Goddard A, Godowski PJ;
Smith V, Stephan JF, Watanabe CK, Wood WI;
                                                                              53257 GIGIGITIGAAGAIACCITITCCCTTITGAITAGACATTCAGTTGATTITAGTGG 53198
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; secreted protein; PRO; tumour; lung cancer; colon cancer; breast cancer; prostate tumour; rectal tumour; liver tumour; perloyte cell proliferation; chondrocyte cell proliferation; tumour necrosis factor-alpha; gene; Ss.
                                                                                                                                                                                                                                                                                                                                                                                                                   cDNA encoding human PRO protein, Seq ID No 81.
                                               71 yLeuThrLeuGlnAspLeuGlnLeu------Trp------
                                                                                                                                                                                                                                                       to: 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 2; Figure 81; 359pp; English.
                                                                                                                                                                                                                                                       TOIG Of: abk33576 check: 121 from: 1
                                                                                                                                                                       53138 GITGTATCTTACAGAGTGCTACAC 53115
                                                                                                                                                                                                                                                                                                ABK33576 standard; cDNA; 1186 BP
                                                                                                                                  81 -- CysAsnLeu-ArgIleIleHis 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000WO-US30873.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20000S-0747259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001WO-US06520
2001US-0854280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US20710.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200000S-000000P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000WO-US32678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000WO-US34956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001WO-US17092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-220607P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     000US-220638P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-220664P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-220666P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000WO-US23522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000WO-US23328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-JUN-2001; 2001WO-US21066.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-220605P
                                                                                                                                                                                                                                                                                                                                                                                 08-MAY-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Desnoyers L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tumour or liver tumour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GETH ) GENENTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-172001/22.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; AAU83632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200208288-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Grimaldi JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-DEC-2000;
28-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LO-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28 - NOV - 2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31-JAN-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Baker KP,
                                                                                                                                                                                                                                                                                                                                                ABK33576;
                                                                                                                                                                                                                         RESULT 10
```

```
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
The invention relates to one hundred and twenty two nucleic acids encoding PRO polypeptides. The sequences of the 122 PRO polynucleotides cencode human secreted proteins. The PRO nucleic acids, polypeptides, agonists and antagonists are useful for treating a PRO related disorder. The PRO polypeptides are useful for diagnosing tumours, especially lung liver tumour. The PRO polypeptides are useful for stimulating the release of tumour prostate tumour, rectal tumour or proliferation of, or gene expression, in periorte cells, for stimulating the release of tumour necrosis factor-alpha from human blood, for stimulating or inhibiting the proliferation of normal human dermal weight markers and for tissue typing. The PRO nucleic acids have applications in molecular biology, including use as hybridisation probes, and in chromosome and gene mapping. ABK33536-ABK33657 represent human exx
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541 İGTTTCCAAGAAGAAGACTCGTTTTATGAGCCTCATGGGATATTGATGGTATTAATAAC 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481 AAGATGAGTTGAAGGCTGAGGGTCAGGATT--GCCATTCTTAGCAAATACTTCTTTCTCC 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 LeuThrLeuSerLeuGlnLeuIle---LeuLeuLeu-----IleProSerIleSerHi 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          423 CTATTAAAATTCATCAGAAGCAGTTCACTTGCAGCTGGCAGGGCCAACGATACACCTTCA 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34 ------AsnMetThrPheSer 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        245 TTGCTGAGAĞTĞCAĞĞAAAGACĞĞĞĞAĞAĞCAĞĞĞĞTAĞCATCTTCCCCAĞACAĞĞTT 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 AGGAGGTTACGTGAATGTCAAACAGTAGAAAACAATCCCTGCAAAAATGCAGAGGCTGCC 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54 -----TyrTyrArgAsnAla 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60 AspileCysSerArg------68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79 ------ CysAsn------ 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125 TCAGTAACATITCTAGGGGACCAGCAATCTGGGGCATGTAACAGATCCCCTCCAGGGTGA 66
                                                                                                                                                                                                                                                                                                              ABK33576 Length: 1186 December 11, 2002 15:45 Type: N Check: 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----AsnGlyLys------LeuArgValLysGly------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69 -----SerAlaGlyLeuThr------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20 sGluAla----HisLysThrSerLeu----SerSerTrpLysHisAsp------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65 AGGACAAGTGCTGGGGCCCTCCACCCCTACTCTCCAACCTCCTTCAC 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1186 BP; 314 A; 285 C; 299 G; 288 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                          Matches:
                                                                                                                                                                                                                                                                                                                                                                                           Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            us-09-880-457-4 (1-87) x abk33576 (1-1186)
                                                                                                                                                                                                                                                                                                                                                                                                   101.10
16.098
11.358
22.228
                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
   Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δŏ
```

```
PAT 13-FEB-2002
                                                                                                                                                                                                Baker, K.P., Desnoyers, L., Gerritsen, M.E., Goddard, A., Godowski, P.J., Grimaldi, J.C., Gurney, A.L., Smith, V., Stephan, J.P., Watanabe, C.K. and Wood, W.I.
Secreted and transmembrane polypeptides and nucleic acids encoding
                                                                                                                                     Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 IGTTTCCAAGAAGAAGACTCGTTTTATGAGCCTCATGGGATATTGATGGTATTAATAAC 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481 AAGATGAGTTGAAGGCTGAGGGTT--GCCATTCTTAGCAAATACTTCTTCTCC 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 LeuThrLeuSerLeuGlnLeuIle---LeuLeuLeu-----IleProSerIleSerHi 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20 sGluAla----HisLysThrSerLeu----SerSerTrpLysHisAsp------ 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34 ------AsnMetThrPheSer 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245 TIGCIGAGAGIGCAGGAAAGACGGGGAGAGCAGGGGGTAGCATCTICCCCAGACAGGGTT 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185 AGGAGGTTACGTGAATGTCAAACAGTAGAAAACAATCCCTGCAAAAATGCAGAGGCTGCC 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54 ----TyrTyrArgAsnAla 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60 AspileCysSerArg------68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length: 1186 December 11, 2002 15:46 Type: N Check: 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46 -----AsnGlyLys------LeuArgValLysGly------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43
18
23
297
                                                      DNA
              TOIG of: ax358828 check: 121 from: 1 to: 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative:
                                                                                                                                                                                                                                                                     Parent: WO 0193983-A 81 13-DEC-2001;
Genentech Inc. (US)
Location/Qualifiers
1. 1186
/organism="Homo gapiens"
                                                                                                                                                                                                                                                                                                                                                                       288 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches:
                                                    AX358828 1186 bp
Sequence 81 from Patent WO0193983.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels:
                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                    299 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us-09-880-457-4 (1-87) x ax358828 (1-1186)
                                                                                           AX358828.1 GI:18675315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69 -----SerAlaGlyLeuThr----
                                                                                                                                                                                                                                                                                                                                                                     285 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16.098
11.358
22.228
                                                                                                                                                                                                                                                                                                                                                                    314 a
                                                AX358828
                                                                                AX358828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                        Source
                                                            DEFINITION
                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                          AX358828
ax358828/c
                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No.:
                                                                                         VERSION
                                                                                                                                                                                                                                             TITLE
                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                            ax358828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QQ
```

:::   b 125 TCAGTAACATTTCTAGGGGACCAGCAATCT	TCAGTAACATTTCTAGGGGACCAGCAATGTGGGGCATGTAACAGATCCCCTCCAGGGTGA 66	՝⊡
y 83Leuarg	CCTACTCCAACCTCCTTCAC 15	ờ Ά
RESULT 12 xx362321/c ; TOIG of: ax362321 check: 121 from:	1 to: 1186	Q Δ
LOCUS AX362321 from Patent WG DEFINITION Sequence 81 from Patent WG ACCESSION AX362321 GI:18694618 FEWORDS	1186 bp DNA linear PAT 15-FEB-2002 WO0208288.	
; SOURCE human. ; ORGANISM Homo sapiens ; Detaryota; Metacoa; Chordata; Mammalia; Butheria; Primates;	lata; Craniata; Vertebrata; Euteleostomi; rtes; Catarrhini; Hominidae; Homo.	מנ
REFERENCE 1 AUTHORS Baker, K.P., Desnoyers, L., Godowski, P.J., Grimaldi, J. Watanabe, C.K. and Wood, W.: TITLE Secreted and transmembran	1 Baker,K.P., Desnoyers,L., Gerritsen,M.E., Goddard,A., Godowski,P.J., Grimaldi,J.C., Gurney,A.L., Smith,V., Stephan,J.P., Watanabe,C.K. and Wood,W.I. Secreted and transmembrane polypeptides and nucleic acids encoding	
the same JOURNAL Patent: WO 0208288-A 81 31-JAN-2002, Genentech, Inc. (US) FEATURES Location/Qualifiers		
source 11186 //Organism="Homo sapiens / Ab_xref="taxon:9606" / Ab_xref="taxon:9606" / Ab_xref="taxon:9606" / Ab_xref="taxon:9606" / Ab_xref="taxon:9606"	sapiens" :9606" 9 g 288 t	
; AX362321 Length: 1186 December 11, ax362321	2002 15:47 Type: N Check: 121	
Alignment Scores:  Pred. No.:  Score:  101.10  Percent Similarity:  16.09\$  Best Local Similarity:  11.35\$  Query Match:  1	Length: 1186 Matches: 43 Conservative: 18 Mismatches: 23 Indels: 1	
us-09-880-457-4 (1-87) x ax362321 (1-11	-1186)	
Qy 4 LeuThrLeuSerLeuGlnLeuIleLe 	LeuThrLeuSerLeuGlnLeuIleLeuLeuLeuIleProSerIleSerHi 20 	
Qy 20 sGlualaHisLysThrSerLeuSerSerTrpLysHisAsp 	SGluAlaHisLysThrSerLeuSerSerTrpLysHisAsp 33   ::        TGTTTCCAAGAAGAAGACTCGTTTATGAGCCTCATGGGATATTGATGGTATTAATAAC 482	
34		
46	AsnGlyLysLeuargValLysGly53 	
54		
Db 363 GIGICCCCCTCGGGCICICCTGGATIC	GTGTCCCCCCTCGGGCTCTCCTGGATTCCTCAGCCCAGCACTCACT	
Qy 60 AsplecysSerArg	ASPIJECYSSGRARG	
69	73	

186	78	126	82	99			
	7471   1   1   1   1   1   1   1   1   1	185 AGGAGGTTACGTGAATGTCAAACAGTAGAAAACAATCCCTGCAAAAATGCAGAGGCTGCC 126	79CysAsn	:::   125 TCAGTAACATTTCTAGGGGACCAGCAATCTGGGGCATGTAACAGATCCCCTCCAGGGTGA 66	83Ibelens 87	GGGCCCTCCACCCCCTACTCTCCAAC	Searrh completed: December 11, 2002, 15:54:29
24	7	18	7	12	ω	9	ر ب
Dp	Qy	qu	QY	qq	Οy	QQ	S. F.

Search completed: December 11, 2002 Job time : 96 secs

i						
i.		•				
			·			
				•		
	•					
					,	
						•
						s <b>•</b>
. *						
r						